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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,385	07/05/2001	David Paul Jones	ESM00-003	3631

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EXAMINER

RUDE, TIMOTHY L

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/898,385	Applicant(s) JONES ET AL.	
	Examiner Timothy L Rude	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2004.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 24-32 is/are pending in the application.
 4a) Of the above claim(s) 25 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1,3,24 and 26-32 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims

1. Claims 2, 4, and 5 are canceled. Claim 1 is amended. Claims 24-32 are added.

Election/Restrictions

2. Newly submitted claim 25 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Originally presented claims were acted upon by the Office and rejected with an optical shielding layer that is comprised of a light reflective material thereby establishing an elected species of the claimed invention (MPEP 818.02(a) and MPEP 818.01(a)).

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 25 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

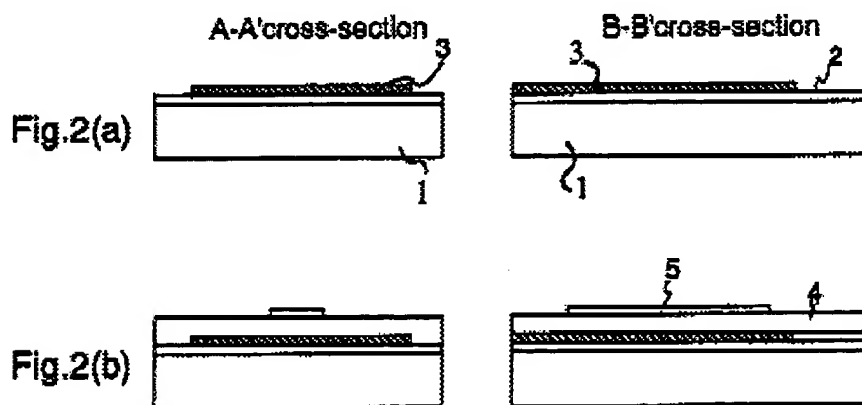
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

Art Unit: 2871

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, and 24-30 are rejected under 35 U.S.C. 102(e) as being Anticipated by Sera USPAT 6,559,913 B1.

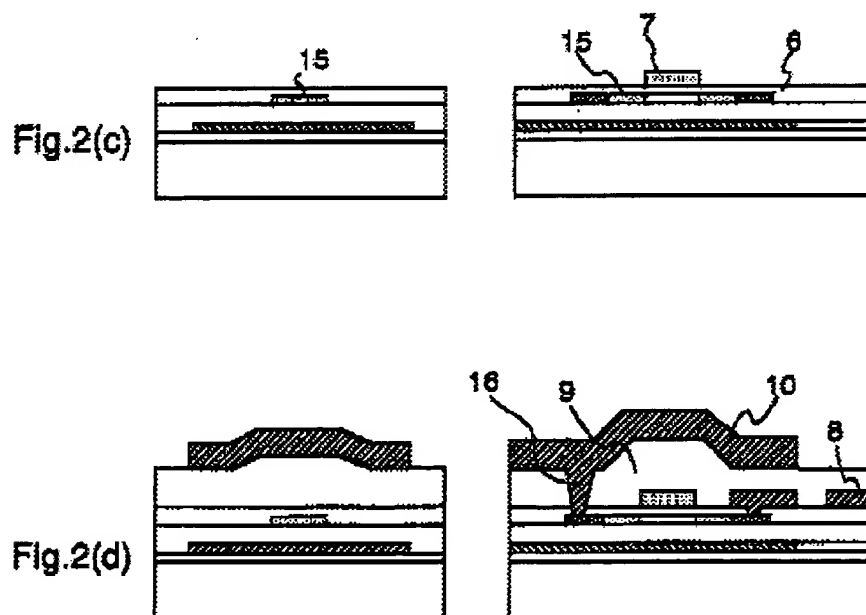
As to claim 1, Sera discloses in Example 1, Figures 1-2f, (col. 6 line 15, through col. 8, line 29 and col. 4, line 34 through col. 6, line 14) an optical element consisting of a transparent insulating substrate, 1; a gate line, 7 (Applicant's circuitry layer), on the insulating substrate; and an underneath light-shielding film, 3 (Applicant's opaque optical shielding layer) (col. 6, lines 30-40), disposed to lie between the insulating substrate layer and the circuitry layer (per Figures 2a-2f).



Sera discloses the circuitry layer includes an active polysilicon layer, 5, (col. 7, lines 1-11) and the shielding layer is between the insulating substrate and the active polysilicon layer (per Figure 2b).

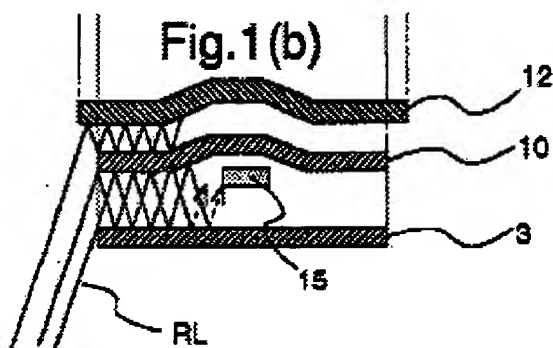
Sera discloses the optical element is part of a liquid crystal display and the opaque shielding layer also functions as a light shielding film (Applicant's black matrix) for said display (col. 6, lines 30-40).

As to claim 3, Sera discloses the optical element of claims 1 and 2 wherein the shielding layer comprises Tungsten Silicide (WSi), (col. 6, lines 30-40) because it must withstand the temperature of annealing the polysilicon formation in a later step (Applicant's material that is unaffected by exposure to temperatures up to 1,100 °C).

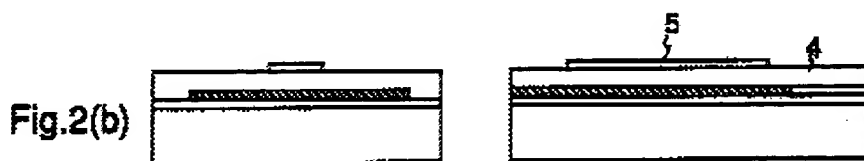


Art Unit: 2871

As to claim 24, Sera discloses the optical element of claim 1, wherein the optical shielding layer, 3, is comprised of a light reflective material as illustrated in Figure 1(b). Please note that the disclosed material of Sera is WSi that has a lower reflectance than Al (col. 5, lines 9-16) and is therefore also an absorptive material (also reads on non-elected species, claim 25).



As to claims 26 and 27, Sera discloses in Figure 2(b) the optical element of claim 1, wherein the optical shielding layer is comprised of tungsten (WSi, Applicant's refractory metal) completely covered by itself (WSi, Applicant's encapsulated in a suitable barrier layer), (col. 6, lines 30-62). Please note that comprising format allows a solid material consisting of WSi to read on a claimed structure comprising W encapsulated in WSi.



As to claim 28, Sera discloses the optical element of claim 26, wherein the barrier layer comprises tungsten silicide (col. 5, lines 58-59 and col. 6, lines 30-50).

As to claim 29 and 30, Sera discloses the optical element of claim 26, further comprising a first interlayer film, 4 (Applicant's cap) over said barrier layer comprising silicon oxide (col. 6, lines 51-62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

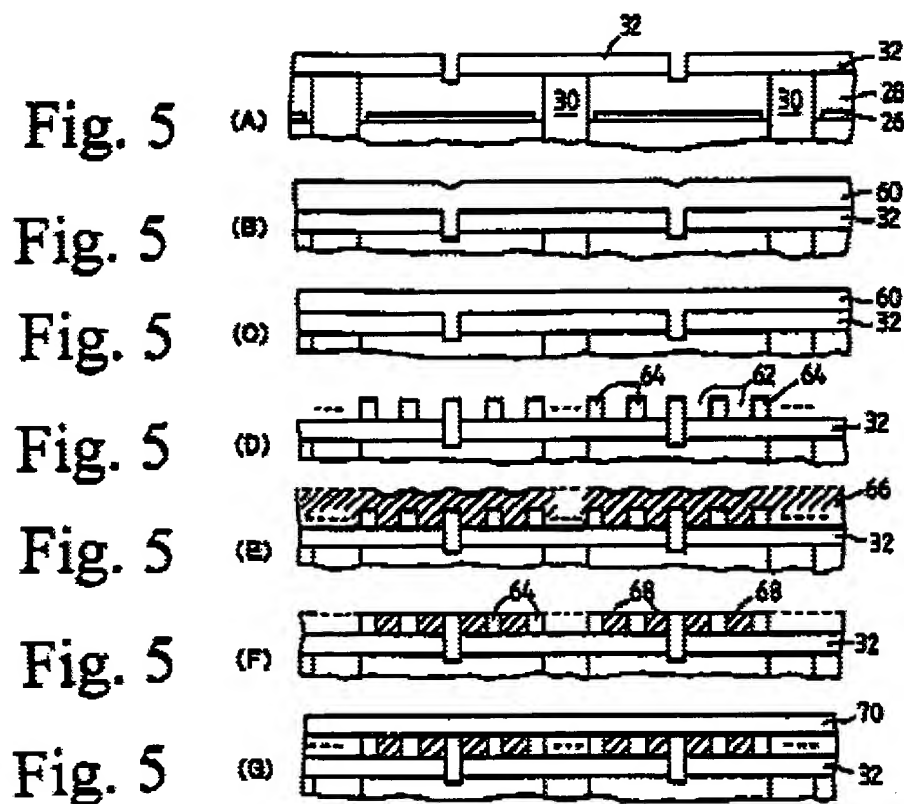
This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sera in view of Shinohara et al (Shinohara) USPAT 6,292,246 B1.

As to claims 31 and 32, Sera discloses the optical element of claim 26.

Sera does not explicitly disclose an element further comprising an adhesive layer disposed between the refractory metal and the transparent insulating substrate, wherein the adhesive is comprised of a titanium/titanium nitride laminate.

Shinohara teaches in Figures 5(a)-5(g) the use of an adhesive layer disposed between tungsten (Applicant's refractory metal) and the transparent insulating substrate, wherein the adhesive is comprised of a titanium/titanium nitride laminate under a layer comprising tungsten to provide improved adhesion to the underlying silicon dioxide layer (col. 5, lines 36-50).



Shinohara is evidence that ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation to add an adhesive layer disposed between the refractory metal and the transparent insulating substrate, wherein the adhesive is comprised of a titanium/titanium nitride laminate under a layer comprising tungsten to provide improved adhesion to the underlying silicon dioxide layer.

Therefore, it would have been obvious to one having ordinary skill in the art of liquid crystals at the time the invention was made to modify the LCD of Sera with an adhesive layer disposed between the refractory metal and the transparent insulating substrate, wherein the adhesive is comprised of a titanium/titanium nitride laminate

under a layer comprising tungsten to provide improved adhesion to the underlying silicon dioxide layer.

References cited but not applied are relevant to the instant Application.

Response to Arguments

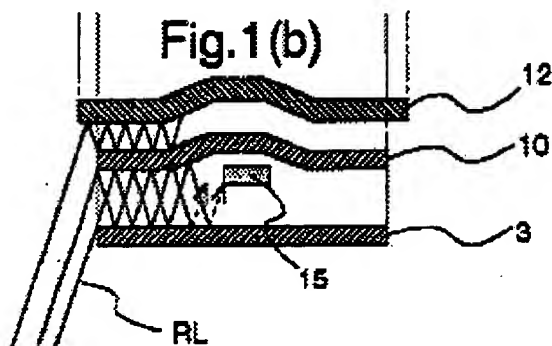
Applicant's arguments filed on 09 January 2004 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are as follows:

The opaque shielding of Sera does not function as a black matrix.

Examiner's responses to Applicant's ONLY arguments are as follows:

It is respectfully pointed out that Sera discloses an underneath light-shielding film (well known in the art to be the function/definition of a black matrix) in addition to other light shielding layers. The mere presence of multiple light-shielding films/layers and the mere multiple functionality of such films/layers do not prevent the device of Sera from reading on the present claims as broadly written. The light-shielding function (black matrix function) of said films/layers (3, 10, and 12) is illustrated in Sera's Figure 1(b).



Please also note that claims are presently in comprising type format.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



tlr

Timothy L Rude
Examiner
Art Unit 2871



DUNG T. NGUYEN
PRIMARY EXAMINER